

IN THE CLAIMS:

Please amend Claims 12, 29, 39, 40, 43, and 44 and add new Claims 51 and 52 as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

1. (Previously Presented): A method of processing a request from a first communication apparatus connected through a communication network to a remote second communication apparatus, the method being implemented in the second apparatus, the method comprising the steps of:

receiving the request, wherein the request is for obtaining digital data of a compressed digital signal that comprises header data and a signal body comprising data packets;

determining whether or not at least one pointer marker, providing information for calculating the length of the part of the signal body preceding at least one data packet corresponding to the request, is absent in the header data via a test;

forming the at least one pointer marker in the compressed digital signal when the determining step determines that the at least one pointer marker providing information for calculating the length of the part of the signal body, is not present in the header data; and

processing the request including the step of determining a position, in the body of the compressed digital signal, of the at least one data packet corresponding to the request as a function of the length of the header data and of the at least one pointer marker present in the header data of the compressed digital signal.

2. (Previously Presented) The method according to Claim 1, further comprising the step of determining the length of the part of the body of the compressed digital signal preceding the data packet under consideration comprising a preliminary step of determining the order of appearance of the data packet in the body of the compressed digital signal, according to parameters relating to structure and organization of the data in the compressed digital signal.

3. (Previously Presented) The method according to Claim 1, wherein the compressed digital signal is partitioned into a number n of independently compressed regions $t_i = 1$ to n and $n \geq 1$, the body of the compressed digital signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

4. (Previously Presented) The method according to Claim 3, wherein the length of the part of the body of the compressed digital signal preceding the data packet under consideration is determined from:

at least one pointer marker PLT providing information for calculating the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

the length of the header data of the region where the packet under consideration is located and, when one or more regions precede the region where the packet under consideration is located,

at least one pointer marker TLM providing information for calculating the length of the preceding region or regions.

5. (Previously Presented) The method according to Claim 4, wherein a pointer marker TLM providing information for calculating the length of each region t_i is present in the header data.

6. (Previously Presented) The method according to Claim 4, wherein a pointer marker PLT providing information for calculating the length of the data packets in a region t_i is present in the header data of the region concerned.

7. (Previously Presented) The method according to Claim 1, further comprising the steps of extracting and transmitting to the first communication apparatus the at least one data packet having a position that has been determined.

8. (Previously Presented) The method according to Claim 1, wherein the request for obtaining digital data specifies at least one data packet of the compressed digital signal.

9. (Previously Presented) The method according to Claim 1, wherein the request for obtaining digital data specifies part of the compressed digital signal.

10. (Previously Presented) The method according to Claim 9, wherein, subsequent to the request being received, the method comprises a step of identifying the data packet or packets necessary for the reconstruction of the specified part of the compressed digital signal.

11. (Canceled)

12. (Currently Amended): A method of processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the method being implemented in the first communication apparatus, the method comprising the steps of:

receiving only a portion of a compressed digital signal present in the second apparatus and comprising a body that comprises data packets, the received portion of the compressed digital signal comprising at least one data packet;

generating a derived compressed digital signal derived from the compressed digital signal present in the second apparatus in the form of a cache file, the derived compressed digital signal comprising header data and a body and capable of containing all or part of the body of the compressed digital signal present in the second apparatus;

filling the body of the derived compressed digital signal in the cache file with arbitrary data, so as to constitute a space of the same size as the body of the compressed digital signal present in the second apparatus;

determining a position at which the at least one data packet of the received portion of the compressed digital signal is to be inserted into the body of the derived compressed digital signal, the position being determined as a function of the length of the header data and of at least one pointer marker previously received and inserted into the header data of the derived compressed digital signal by the first apparatus, the at least one pointer marker providing information for calculating the length of the part of the body of the derived compressed digital signal preceding the at least one data packet of the received portion of the compressed digital signal; and

inserting into the body of the derived compressed digital signal the at least one data packet of the received portion of the compressed digital signal at the determined position;
and

a phase of converting the derived compressed digital signal into a valid signal comprising the steps of:

extracting from the derived compressed digital signal the header data and received data packets;

forming the header data of the valid signal from the header data extracted from the derived compressed digital signal;

concatenating the data packets extracted from the derived compressed digital signal in the body of the valid signal; and

when one or more data packets present in the body of an original compressed digital signal in the second apparatus, from which the derived compressed digital signal is derived, are not received by the first apparatus, concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived compressed digital signal.

13. (Previously Presented) The method according to Claim 12, wherein the compressed digital signal present in the second apparatus is an original compressed digital signal, said method further comprising the preliminary steps of:

receiving the header data from the original compressed digital signal present in the second apparatus, the received header data comprising at least one pointer marker TLM providing information for calculating the length of the body of the original compressed digital signal; and

forming, from the received header data, the derived compressed digital signal which thus comprises, as header data, the received header data and a signal body of length equal to that of the body of the original compressed digital signal, the body of the derived compressed digital signal representing a space initially filled with the arbitrary data and later containing the at least one data packet received from the second apparatus.

14. (Previously Presented) The method according to Claim 12, wherein the derived compressed digital signal is partitioned into a number n of independently compressed regions t_i , $i = 1$ to n and $n \geq 1$, the body of the signal of the derived compressed digital signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

15. (Previously Presented) The method according to Claim 14, wherein the length of the part of the body of the derived compressed, digital signal preceding the data packet under consideration is determined from:

at least one pointer marker PLT providing information for calculating the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

the length of the header data of the region where the packet under consideration is located, and,

when one or more regions precede the region where the packet under consideration is located, at least one pointer marker TLM provides information for calculating the length of the preceding region or regions.

16. (Previously Presented) The method according to Claim 15, wherein a pointer marker providing information for calculating the length of each region t is present in the header data of the derived compressed digital signal.

17. (Previously Presented) The method according to Claim 15, wherein a pointer marker providing information for calculating the length of the data packets in a region t_i is present in the header data of the region under consideration.

18. (Previously Presented) The method according to Claim 14, further comprising the steps of:

receiving region header data;

determining a position at which the received region header data is to be inserted into the body of the derived compressed digital signal, the position being determined according to the length of the header data of the derived compressed digital signal and, when one or more regions of the derived compressed digital signal precede the region header data according to one or more pointer markers TLM received previously, said method provides respectively the length of the preceding region or regions; and

inserting the received region header data at the determined position.

19. (Previously Presented) The method according to Claim 12, further comprising the step of determining the length of the part of the body of the derived compressed digital signal preceding the at least one data packet comprising a preliminary step of determining the order of appearance of the at least one data packet in the body of the derived

compressed digital signal according to parameters relating to structure and organization of the data in the derived compressed digital signal.

20. (Previously Presented) The method according to Claim 13, further comprising a phase of converting the derived compressed digital signal into a valid signal comprising the steps of:

extracting from the derived compressed digital signal the header data and received data packets;

forming the header data of the valid signal from the header data extracted from the derived compressed digital signal;

concatenating the data packets extracted from the derived compressed digital signal in the body of the valid signal; and

when one or more data packets present in the body of the original compressed digital signal are not received by the first apparatus, concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived compressed digital signal.

21. (Previously Presented) The method according to Claim 13, further comprising the steps of:

going through the data contained in the body of the derived compressed digital signal;

converting, when the data gone through does not correspond to a data packet received from the second apparatus, the space filled by the data concerned into an empty packet; and

shifting in an adapted manner the data comprising the remainder of the body of the derived compressed digital signal.

22. (Previously Presented) The method according to Claim 12, wherein the data received by the first apparatus comprises the reply to a request previously transmitted from the first apparatus to the second apparatus.

23. (Previously Presented) A device for processing a request coming from a first communication apparatus connected through a communication network to a remote second communication apparatus, the device being implemented in the second apparatus, the device comprising:

a receiver that receives the request, wherein the request is for obtaining digital data of a compressed digital signal that comprises header data and a signal body comprising data packets;

a determining device that determines whether or not at least one pointer marker, providing information for calculating the length of the part of the signal body preceding at least one data packet corresponding to the request, is absent in the header data via a test;

a forming device that forms the at least one pointer marker in the compressed digital signal when the determining device determines that the at least one pointer marker providing information for calculating the length of the part of the signal body, is not present in the header data; and

a processor that processes the request and determines a position, in the body of the compressed digital signal, of the at least one data packet corresponding to the request

as a function of the length of the header data and of the at least one pointer marker present in the header data of the compressed digital signal.

24. (Previously Presented) The device according to Claim 23, further comprising a length determining device that determines the length of the part of the body of the compressed digital signal preceding the data packet under consideration and determines the order of appearance of the data packet in the body of the compressed digital signal according to parameters relating to structure and organization of the data in the compressed digital signal.

25. (Previously Presented) The device according to Claim 23, wherein the compressed digital signal is partitioned into a number n of independently compressed regions t_i , $i = 1$ to n and $n \geq 1$, the body of the compressed digital signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

26. (Previously Presented) The device according to Claim 25, wherein the length of the part of the body of the compressed digital signal preceding the data packet under consideration is determined from:

at least one pointer marker PLT providing information for calculating the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

the length of the header data of the region where the packet under consideration is located,

and, when one or more regions precede the region where the packet under consideration is located, at least one pointer marker TLM providing information for calculating the length of the preceding region or regions.

27. ((Previously Presented)) The device according to Claim 23, further comprising an extractor that extracts and transmits to the first communication apparatus the at least one data packet having a position that has been determined.

28. (Canceled)

29. (Currently Amended) A device for processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the device being implemented in the first communication apparatus, the device comprising:

a receiver that receives only a portion of a compressed digital signal present in the second apparatus and comprising a body that comprises data packets, the received portion of the compressed digital signal comprising at least one data packet;

a generating device that generates a derived compressed digital signal derived from the compressed digital signal present in the second apparatus in the form of a cache file, the derived compressed digital signal comprising header data and a body and capable of containing all or part of the body of the compressed digital signal present in the second apparatus;

a filling device that fills the body of the derived compressed digital signal in the cache file with arbitrary data, so as to constitute a space of the same size as the body of the compressed digital signal present in the second apparatus;

a processor that determines a position at which the at least one data packet of the received portion of the compressed digital signal is to be inserted into the body of the derived compressed digital signal, the position being determined as a function of the length of the header data and of at least one pointer marker previously received and inserted into the header data of the derived compressed digital signal by the first apparatus, the at least one pointer marker providing information for calculating the length of the part of the body of the derived compressed digital signal preceding the at least one data packet of the received portion of the compressed digital signal; ~~and~~

an inserting device that inserts, into the body of the derived compressed digital signal, the at least one data packet of the received portion of the compressed digital signal at the determined position; and

a converter that converts the derived compressed digital signal into a valid signal which comprises:

an extractor that extracts from the derived compressed digital signal header data and received data packets;

a forming device that forms the header data of the valid signal from the header data extracted from the derived compressed digital signal; and

a concatenating device that concatenates the data packets extracted from the derived compressed digital signal in the body of the valid signal and, when one or more data packets present in the body of an original compressed digital signal in the second apparatus, from which the derived compressed digital signal is derived, are not received by

the first apparatus, concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived compressed digital signal.

30. (Previously Presented) The device according to Claim 29, wherein the compressed digital signal present in the second apparatus is an original compressed digital signal, said device further comprising:

a header-data receiver that receives the header data from the original compressed digital signal present in the second apparatus, the received header data comprising at least one pointer marker TLM providing information for calculating the length of the body of the original compressed digital signal; and

a forming device that forms the derived compressed digital signal from the received header data and which thus comprises, as header data, the received header data and a signal body of length equal to that of the body of the original compressed digital signal, the body of the derived compressed digital signal representing a space initially filled with the arbitrary data and later containing the at least one data packet received from the second apparatus.

31. (Previously Presented) The device according to Claim 29, wherein the compressed digital signal is partitioned into a number n of independently compressed regions t_i , $i = 1$ to n and $n \geq 1$, the body of the signal of the derived compressed digital signal comprising, for each region, region header data and a region body containing data packets of the region under consideration.

32. (Previously Presented) The device according to Claim 31, wherein the length of the part of the body of the derived compressed digital signal preceding the data packet under consideration is determined from:

at least one pointer marker PLT providing information for calculating the length of the data packet or packets preceding the data packet under consideration in the region where this packet is located,

the length of the header data of the region where the packet under consideration is located, and,

when one or more regions precede the region where the packet under consideration is located, at least one pointer marker TLM provides information for calculating the length of the preceding region or regions.

33. (Previously Presented) The device according to Claim 31, further comprising:

a region-header-data receiver that receives region header data;

a determining device that determines a position at which the received region header data is to be inserted into the body of the derived compressed digital signal, the position being determined according to the length of the header data of the derived compressed digital signal and, when one or more regions of the derived compressed digital signal precede the region header data, also according to one or more pointer markers TLM received previously, said device provides respectively the length of the preceding region or regions; and

a received-region-header-data inserting device that inserts the received region header data at the determined position.

34. (Previously Presented) The device according to Claim 29, further comprising a length determining device that determines the length of the part of the body of the derived compressed digital signal preceding the at least one data packet and that determines the order of appearance of the at least one data packet in the body of the derived compressed digital signal according to parameters relating to structure and organization of the data in the derived compressed digital signal.

35. (Previously Presented) The device according to Claim 30, further comprising a converter that converts the derived compressed digital signal into a valid signal which comprises:

- an extractor that extracts from the derived compressed digital signal header data and received data packets;

- a forming device that forms the header data of the valid signal from the header data extracted from the derived compressed digital signal; and

- a concatenating device that concatenates the data packets extracted from the derived compressed digital signal in the body of the valid signal and, when one or more data packets present in the body of the original compressed digital signal are not received by the first apparatus, concatenating respectively one or more empty packets in the body of the valid signal in the same order of appearance as that adopted in the derived compressed digital signal.

36. (Previously Presented) The device according to Claim 30, further comprising:

- an examining device that examines the data contained in the body of the derived compressed digital signal;

a converter that converts , when the examined data does not correspond to a data packet received from the second apparatus, the space filled by the data concerned into an empty packet; and

a shifting device that shifts in an adapted manner the data comprising the remainder of the body of the derived compressed digital signal.

37. and 38. (Canceled)

39. (Currently Amended) ~~At~~ A non-transitory information storage device readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing a request according to Claim 1.

40. (Currently Amended) ~~At~~ A non-transitory information storage device readable by a computer or a microprocessor comprising code instructions of a computer program for executing the steps of the method of processing data according to Claim 12.

41. and 42. (Canceled)

43. (Currently Amended) A computer program stored in a non-transitory computer-readable medium for loading into a programmable apparatus, comprising sequences of instructions or portions of software code for implementing the steps of the method of processing a request according to Claim 1, when the computer program is loaded and executed by the programmable apparatus.

44. (Currently Amended) A computer program stored in a non-transitory computer-readable medium for loading into a programmable apparatus, comprising sequences of instructions or portions of software code for implementing the steps of the method of processing data according to Claim 12, when the computer program is loaded and executed by the programmable apparatus.

45. (Previously Presented) The method according to Claim 12, further comprising a preliminary step of forming the derived compressed digital signal which thus comprises the header data and the body, the body of the derived compressed digital signal having a length equal to that of the body of the compressed digital signal present in the second apparatus, the body of the derived compressed digital signal representing a space initially filled with the arbitrary data and later containing the at least one data packet of the portion received from the second apparatus.

46. (Previously Presented) The method according to Claim 45, wherein the insertion into the body of the derived compressed digital signal of the at least one data packet leads to overwriting part of the space initially filled with the arbitrary data.

47. (Previously Presented) The method according to Claim 13, wherein the insertion into the body of the derived compressed digital signal of the at least one data packet leads to overwriting part of the space initially filled with the arbitrary data.

48. (Previously Presented) The device according to Claim 29, further comprising a forming device that forms the derived compressed digital signal which thus comprises the header data and the body, the body of the derived compressed digital signal having a length equal to that of the body of the compressed digital signal present in the second apparatus, the body of the derived compressed digital signal representing a space initially filled with the arbitrary data and later containing the at least one data packet of the portion of the compressed digital signal received from the second apparatus.

49. (Previously Presented) The device according to claim 48, wherein the inserting device overwrites part of the space initially filled with the arbitrary data.

50. (Previously Presented) The device according to Claim 30, wherein the inserting device overwrites part of the space initially filled with the arbitrary data.

51. (New) A method of processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the method being implemented in the first communication apparatus, the method comprising the steps of:

receiving only a portion of a compressed digital signal present in the second apparatus and comprising a body that comprises data packets, the received portion of the compressed digital signal comprising at least one data packet;

generating a derived compressed digital signal derived from the compressed digital signal present in the second apparatus in the form of a cache file, the derived compressed

digital signal comprising header data and a body and capable of containing all or part of the body of the compressed digital signal present in the second apparatus;

filling the body of the derived compressed digital signal in the cache file with arbitrary data, so as to constitute a space of the same size as the body of the compressed digital signal present in the second apparatus;

determining a position at which the at least one data packet of the received portion of the compressed digital signal is to be inserted into the body of the derived compressed digital signal the position being determined as a function of the length of the header data and of at least one pointer marker previously received and inserted into the header data of the derived compressed digital signal by the first apparatus, the at least one pointer marker providing information for calculating the length of the part of the body of the derived compressed digital signal preceding the at least one data packet of the received portion of the compressed digital signal;

inserting into the body of the derived compressed digital signal the at least one data packet of the received portion of the compressed digital signal at the determined position;

going through the data contained in the body of the derived compressed digital signal;

converting, when the data gone through does not correspond to a data packet received from the second apparatus, the space filled by the data concerned into an empty packet; and

shifting in an adapted manner the data comprising the remainder of the body of the derived compressed digital signal.

52. (New) A device for processing compressed digital data received by a first communication apparatus connected through a communication network to a remote second communication apparatus, the device being implemented in the first communication apparatus, the device comprising:

a receiver that receives only a portion of a compressed digital signal present in the second apparatus and comprising a body that comprises data packets, the received portion of the compressed digital signal comprising at least one data packet;

a generating device that generates a derived compressed digital signal derived from the compressed digital signal present in the second apparatus in the form of a cache file, the derived compressed digital signal comprising header data and a body and capable of containing all or part of the body of the compressed digital signal present in the second apparatus;

a filling device that fills the body of the derived compressed digital signal in the cache file with arbitrary data, so as to constitute a space of the same size as the body of the compressed digital signal present in the second apparatus;

a processor that determines a position at which the at least one data packet of the received portion of the compressed digital signal is to be inserted into the body of the derived compressed digital signal, the position being determined as a function of the length of the header data and of at least one pointer marker previously received and inserted into the header data of the derived compressed digital signal by the first apparatus, the at least one pointer marker providing information for calculating the length of the part of the body of the derived compressed digital signal preceding the at least one data packet of the received portion of the compressed digital signal;

an inserting device that inserts, into the body of the derived compressed digital signal, the at least one data packet of the received portion of the compressed digital signal at the determined position;

an examining device that examines the data contained in the body of the derived compressed digital signal;

a converter that converts, when the examined data does not correspond to a data packet received from the second apparatus, the space filled by the data concerned into an empty packet; and

a shifting device that shifts in an adapted manner the data comprising the remainder of the body of the derived compressed digital signal.